# THE ASIAN REAL ESTATE TSUNAMI AND THE TECTONIC AFTERSHOCKS: A CASE FOR ASIAN MACRO REAL ESTATE POLICIES TO ERECT ECONOMIC BREAKWATERS BASED ON THE CHINA PROMETHEAN MODEL

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**Abstract**

Yiu et al (2009) seminal study undertook a historical analysis comparing the previous three asset bubble implosions namely (1) the "Lost Decade" of Japan in the 1980s; (2) the Asian Financial Crisis in Hong Kong in 1997; and (3) the Financial Tsunami in the USA in 2008, which found that the three bubble bursts coincided with periods of negative interest rates and argued that there is a strong and negative relationship between housing return and real interest rate in the three economies examined. The emergence of China post the Western Financial Crisis provided a bulwark defence against the Western Financial Tsunami that hit the shore of the Asian Pacific economies in 2009. Whilst China was affected to some degree, her economic breakwaters provided some degree of protection for the other East Asian economies. This paper will focus on systemic Western financial crises leading to cascading financial aftershocks across the Asian Real Estate markets from 2008 – 2009 with the intention to shed light where the Tectonic plates diverged and gave rise to an Asian Real Estate Tsunami. A case is made for Macro-economic policies to erect Economic breakwaters to mitigate future financial tremors based from the lessons of the Yiu study and the Promethean China model.

## 1.0 Introduction

An overwhelming tide of financial tsunamis are flooding the whole world, resulting in substantial drop of real estate asset prices and liquidity crunches. Bankruptcies, bailouts, defaults, foreclosures, etc. have become daily news headlines from USA to Europe to Asia Pacific. Dozens of research papers and commentaries have rushed to be published to provide explanations on this 21st century crisis. Some of the research blamed weak government regulatory systems, while others on Globalisation of funds; some put the blame on human greediness, whereas others on deficient risk management and excessive usage of financial derivatives with high leverage; some consider it a normal reversion to the mean expectation, and others would regard it as a dire consequence of the Sub-prime mortgage crisis in the USA.

Every financial crisis would have its own uniqueness, and every bubble burst could be attributed to different reasons. Yiu et al (2009) seminal study investigated the common symptom of the previous three bubble implosions in Japan in the 1980s, in Hong Kong in the 1990s, and in the US in the 2000s and discovered that the three bubble bursts coincided with periods of negative interest rates and argued that there is a strong and negative relationship between housing return and real interest rate in the three economies examined.

Common symptom does not necessarily imply that future bubbles can be prevented. Similar to the studies of earthquakes, prediction does not imply prevention. The reasons for choosing three bubbles are several folds. Firstly, they happened in three different countries, in three different decades and in three different scales of economy. A common symptom of these three bubble implosions would be a very good contribution to the literature on Economic Bubbles. Secondly, all of them were highly related to a real estate price drop. Thirdly, each of them had its own uniqueness, for example, the Japan bubble was related to the Yen currency strength (1980-1985), the Hong Kong bubble was said to suffer a contagion effect from the Asian Financial Crisis (1997-1998), and the US Financial Tsunami was told to be the result of Sub-prime mortgages and CDO debacle (2008-2009).

This paper will review literature which examines Globalisation as a precursor to asset bubble leading up to systemic financial crises leading to cascading financial aftershocks across the Asian real estate markets from 1997 – 2009. This paper will focus on systemic financial crises engulfing the Asian real estate markets from 1997 – 2009 with the intention to shed light where the Tectonic plates diverged and gave rise to an Asian real estate tsunami. A case is made for Macro-economic policies to erect economic breakwaters to mitigate future financial tremors based on the China Promethean Model.

## 2.0 Globalisation and direct real estate

Since the early 1980s, globalisation has been a common buzz word in Economics and Business. Countless articles and books have been published claiming to shed light on the interconnectedness that national economies have had on the ways people live and work, not only in developing countries like China and India but also in the West. Real estate has not been immune from this buzz. In fact, for many years, the international dimension of real estate investing has generated a very prolific branch of academic literature (Hamelink, Hoesli, 1994).Urban economists who have been at the forefront of globalization research customarily study the internationalization of urban landscapes (Kresl and Frey, 2005). The existing literature is interested in three related issues:

1. The nature of the flows that define globalization of real estate markets,
2. The relative importance of domestic and international factors in real estate returns,
3. The identification of global drivers in real estate cycles.

In 1988, James Graaskamp gave a speech in Boston on the topic of 'Globalization of Real Estate' (Graaskamp, 1988). In that speech, he provides an interesting assessment of the globalization of US real estate markets in the late 1980s. He identifies two mechanisms favouring globalization of real estate: trade and foreign investments, either in individual properties (direct) or in real estate securities such as REIT stocks (indirect). Graaskamp's speech is devoted to the impact of US and international interest rates on the USA domestic real estate, especially with respect to Japanese investors and their landmark transactions which were grabbing front-page headlines at the time. Graaskamp points out the impact of globalization driven phenomena such as outsourcing of manufacturing jobs (through labour cost) and ballooning imports of consumer goods (through chronic foreign deficit) on US real estate.

Renaud (1998) emphasizes the role of capital flows from Japanese foreign investments, and the closer links between capital markets and the real estate industry as catalysts to the global 1990 crash.

is the cause. Shiller (2007) also attributed the asset booms in the mid 1990s to the falling long-term interest rates queried the rapid expansion of bank credit into the real estate sector in the USA.

The positive feedback spiral of credit expansion is also well received, especially after Minsky's (1992) "Financial Instability Hypothesis". It is because credit expansion leads to an increased value of assets prices, which in turn increases the perceived collateral value of these assets to banks and, thus decreasing the perceived risk exposure of these loans to banks, which are then motivated to lend more to the market at even greater risk to the borrowers. In other words, it is a bubble-credit spiral, as the bigger a bubble, the more the credit is expanded, which in turn makes the bubble even bigger, until it bursts. However, there are at least three new changes on money and credit expansion in the recent decades that make them almost unchecked. First, huge global fund flows are swiftly sweeping across cities. Second, there are now fiat money (money supply not restricted by gold reserves) and bank money (credit supply unchecked by deposits) artificially created by central banks and merchant banks respectively. Third, a new "credit derivatives" has been established to package and distribute the money and credit created.

With the forces of financial globalization and the swift movement of huge global funds, Smick (2008) contended that asset price can be totally out of the local country's control. Before 1971, money expansion was restricted by gold reserves or a fixed exchange rate. However, along with the abolition of the gold standards and the Bretton Woods system, money become fiat money, and its expansion is uncontrollable (Cooper, 2008). Similarly, credit expansion was originally checked by savings and total deposits, but since the invention of bank money, credit can be created from vacuum. The controls on its expansion, such as the Basel II Accord, is now unleashed (Pettifor, 2006). But why investors cannot spot the risk of these unchecked credits? Zandi (2009) and Tett (2009) attributed it to the invention of credit derivatives, which makes risk assessment extremely difficult, if not impossible.

### 3.2 Money and Credit Demand

When excessive money is chasing scarce resources, the result is a general increase of price. Friedman's (1956) "Studies in the Quantity Theory of Money" has highlighted the equivalence between money supply and inflation. Bernanke (2002) said, "the US government can increase the prices in dollars of goods and services by increasing the number of US dollars in circulation." Worse the current demand of fossil fuels, precious metals, timbers, etc. are unprecedented. The heightened aspiration of living standards and the change of living style in recent decades further exacerbate the scarcity of natural resources. It has become more and more inelastic to increase the supply of assets and commodities, which Glaeson et al. (2008) and Goodman and Thibadeau (2008) considered it a reason for the housing real estate bubble in USA.

Wheaton and Nechayev (2008) contended that the demand of second homes caused the sub-prime crisis. Exchange rate between currencies is originally a checking force on trade surplus or deficit, which should be reflected in interest rate and inflation rate of an economy. However, almost all of the trade surpluses earned by other countries from the US consumptions flows back to the US by buying the Treasury Bonds of the US Government. The exchange rate does not actually reflect the trade surplus or deficit. Furthermore, many economies heavily rely on export for their GDP growth, any increase in their currencies would severely hinder their export markets, and

thus many governments do not hesitate to intervene and mitigate the strength of their currencies.

### 3.3 Risk Assessment

Bubble can be regarded as a result of an underestimation of risk exposure of investment. Various reasons can result in an underestimation of risk exposure, such as (1) irrational exuberance; (2) preemptive policy; (3) moral hazard; (4) information asymmetry or information not available; and (5) bubble-credit spiral. Behavioural economists, including Shiller (2005, 2008), considered irrational exuberance or herd behaviour as one of the reasons of the bubbles. But it sounds strange that investors do not learn from the past experience and keep on underestimating their risk exposure again and again. Garber (1990) also disagreed with the logic of irrationality and he found that there were rational fundamentals for the oldest three bubbles. Cooper (2008), on the other hand, regarded pre-emptive policy and moral hazard as the causes of risk underestimation.

Alan Greenspan's (2003) risk-management paradigm attempted to pre-empt economic weakness by guaranteeing lender-of-last-resort as well as launching rescue packages, which Trichet (2003) worried about moral hazard to be resulted. When potential recessions are repeatedly prevented and failed institutions are repeatedly bailed out, borrowers would become more confident and demand an even greater stock of debt. Lenders would also be more aggressive and risk-preferred. Osborne (2001) even found it becomes a globalized moral hazard. Zandi (2009) found that more and more "predatory loans" i.e. granting loans without regard to the borrowers' ability to make timely payments were granted, including sub-prime mortgages, in the US in 2006, was one of the fundamental causes of the crises. "Almost half of all mortgage-linked bonds in America [in 2005] were based on subprime loans" quoted Tett, (2009) and risk assessment has long been a difficult for investors (Bernstein, 1998).

For example, Bucks and Pence (2008) found that many borrowers even did not know their mortgage terms. But the difficulty of risk assessment has become insurmountable, even to bankers and regulators, when the Credit Derivatives system was established. With the invention of asset-backed securities (ABS and MBS), collateralised derivatives (CDO and CDS), and their indices (ABX, TABX, CMBX, CDX, LCDX)1, where default risk of mortgages and loans can be transferred or insured, suddenly it sharply reduces credit risk. However, the actual risk level of the various tranches of the pooled loans in the derivative is not easily comprehensible, and credit rating becomes the sole indicator for the risk exposed. Yet, even the credit rating agencies have difficulties in assessing the risk level of these derivatives because of the lack of past record of a national-wide credit default (Tett, 2009). Selling these derivatives through SIVs (Structured Investment Vehicles) can further avoid the capital requirements set by the Basel II Accord and regulations on banking industry.

### 3.4 Expected Growth

The unchecked credit expansion, unlimited asset demand growth, and the underestimation of risk strengthen the expectation of income growth in the future. New technologies and innovations of investment tools make people believe that unprecedented and unlimited growth in the future is promising. The world is so flat that manufacturing and operating costs are ever decreasing. The dotcom-bubble told an interesting story about the effects of expected income growth in the future on asset pricing. Asset price can be

excessively high even when the current income is rather low. Bansal and Yaron (2004), Lettau and Ludvigson (2005) found significant and positive impact of expected income growth on asset pricing. Dufwenberg et al. (2005) and Sutter et al. (2008) also found by experiments that experience and information of future dividend helps abate bubbles. Although the expected income growth of individual investors cannot be directly observed from the markets, they would be partially reflected in the spread of interest rate, i.e. the difference between long-term and short-term interest rates (Xu and Yiu, 2009).

## 4.0 The Three Asset Bubbles

A bubble is defined as "an upward price movement over an extended period of 15 to 40 months that then implodes." and "in the 20th and 21st Century, most of the manias and bubbles have centred on real estate and stocks." (Kindleberger and Aliber, 2005) The Japan-, Hong Kong- and US- asset price bubbles to be presented below are typical real estate bubbles. Besides measuring the period of upward price movement, Yiu et al (2009) also report the magnitude of change of the asset price when the bubbles were imploded. All of them exceeded 40%. Figure 1 below is a Theoretical Framework by Yiu et al (2009).

### 4.1 The Lost Decade of Japan

Figures 2, 3 and 4 shows the three asset price bubbles of Japan, Hong Kong and the US, in the end of 1980s, the 1990s and the 2000s. All the three show very similar pattern of long-term upward trend with then a very substantial drop.

Figure 2 is the Urban Land Price Index (Residential) of Japan from 1980 to 2008, where the index climbed from 60 to 126 (↑110%) in 11-year time, and it then dived to 72 (↓43%) continuously for 17- year.

### 4.2 The Asian Financial Crisis Contagious to Hong Kong

Figure 3 is the Housing Price Index (Composite) of Hong Kong from 1993 to 2008, where it shows two bubble bursts. This is probably the only city encountered two bubble implosions of such a magnitude within 10-year time. The index increased from 85 to 170 (↑100%) from 1993 to 1997 (upward price trend for 5-year), and then dropped to 60 (↓99%) in 2003. It climbed up again to 123 (↑105%) in 2008 (upward price trend for 6-year), when the financial tsunami came.

### 4.3 The Subprime Crisis of the US

Figure 4 is the Home Price Index (Conventional Mortgage) of the US from 1970 to 2008, where it shows the latest subprime crisis in 2008.

The index increased from 32 to 294 (↑819%) from 1970 to 2007 (upward price trend for more than 37-year), and then plummeted in 2007/2008.

### 4.4 A Unique Cause of the Bubble?

The 1990s was coined as the Lost Decade of Japan, and most of the studies on the causes of the Japan bubble burst in 1989 attributed it to the currency strength of Yen. The story is often started from the Plaza Accord signed in Sep. 1985, then the Yen to US$ exchange rate has dropped continuously and substantially (about 50% drop from 254 in 1985 to 127 in 1990; and then further to 80 in 1995), as shown in Figure 5.

Trying to retain the strength in exports, Japan had a very strong incentive to "cushion the effect of the stronger Yen". (Smick, 2008) The Bank of Japan has therefore lowered the short-term interest rate five times, from 9% in 1980 to 2.5% in 1989, as shown in Figure 6. Unfortunately,

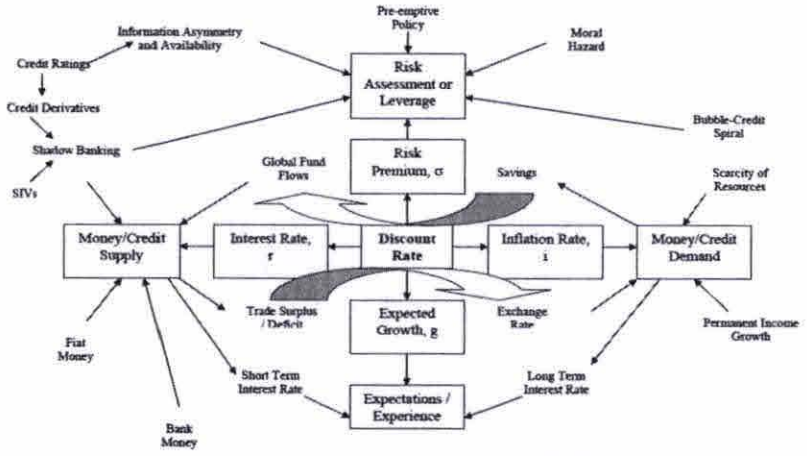


**Figure 1: Theoretical Framework for the Causes of Asset Price Bubbles**

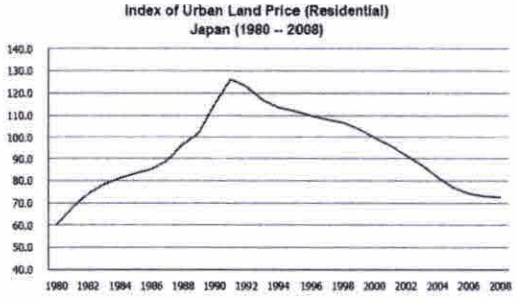


**Figure 2: The Index of Urban Land Price (residential) in Japan (1980 - 2008)**
*Source: Japan Real Estate Institute, http://www.stat.go.jp/english/data/chouki/15.htm*

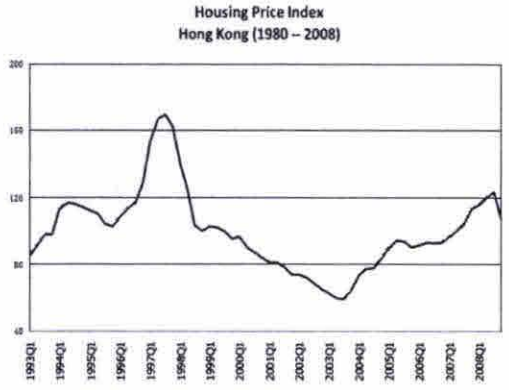


**Figure 3: Housing Price Index in Hong Kong (1993 - 2008)**
*Source: Rating and Valuation Department, Hong Kong SAR*
*http://www.rvd.gov.hk/en/publications/proreview.*

such a cushion has blown up an asset price bubble by injecting excessive credit supply. Then "by late 1989, realizing their mistakes as the bubble grew larger, The Bank of Japan reversed course and raised short-term interest rate in relatively quick steps to 6%", (Smick, 2008) in 1991 as shown in Figure 6. The action might be too late and the bubble was imploded in 1991. Interest rate was then reduced from 6% gradually to 0%, and drove Japan into a "Lost Decade", when the economy fell into a deflationary spiral.

The Asian Financial Crisis started in Thailand in July 1997, and was also considered a consequence of exchange rate change. However, as Hong Kong adopted a Currency Board system, with the currency is pegged to the US$, there should be no currency risk in Hong Kong. However, the Hong Kong bubble burst in 1997 was said to be a contagious effect of the whole region. Since the Hong Kong currency is pegged to US$2, the interest rate in Hong Kong is therefore closely tracked with that in the USA due to arbitrageurs, the difference between the two reflects the risk premium of savings/ defaults in Hong Kong. Figure 7 shows


**Figure 4: Conventional Mortgage Home Price Index in the US (1970-2008)**
*Source: Freddie Mac: CMHPI, http://www.freddiemac.com/finance/cmhpi/*

the short term interest rates of the US and Hong Kong, which they tracked each other closely except during the bubble burst in 1997/1998. Similarly, the subprime crisis in the US in 2008 was also regarded as a once-in-a-century incident, which is basically the consequence of the housing price plummeting and the substantial defaults of the subprime mortgages.

### 4.5 A Common Symptom: Negative Real Interest Rate

A generalized theory or a common symptom for more than one bubble implosion is of paramount importance in understanding the real cause of bubble bursting, and it is one of the basic scientific requirements for a prediction to be repeatable. In line with the theoretical framework in Figure 1, the four key sources of bubbles, 1)money/credit supply, 2)money/credit demand, 3) underestimation of risk and 4) expected income growth, should be reflected in the market interest rate and inflation rate. Yiu et al (2009) therefore posited that **negative real interest rate** is a common symptom of asset price bubbles, where real interest rate is defined as nominal interest rate minus inflation rate. They found that, among the three bubbles in Japan in 1989, Hong Kong in 1997, and in the US in 2008, negative real interest rate was one of the culprits. And it is the **only phenomenon** that can be found in all the three bubble implosions. In other words, each of these implosions is not the consequence of a unique cause; at least they shared a common symptom.


**Figure 5: The Exchange Rate of Japanese Yen to US Dollar**
*Source: Statistical Survey Department, Statistics Bureau, Ministry of Internal Affairs and Communications, http://www.stat-search.boj.or.jp/ssi/mtshtml/m_en.html*

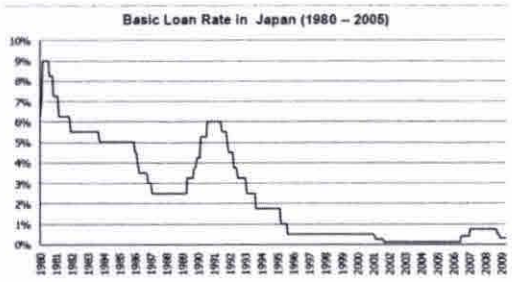


**Figure 6: Basic Loan Rate in Japan (1980 -- 2008)**
*Source: Statistics Bureau, Ministry of Internal Affairs and Communications, Japan, http://www.statsearch.boj.or.jp/ssi/mtshtml/m_en.htm*

Figures 8, 9 and 10 show the real interest rates (i.e. nominal interest rate – inflation rate) of the three economies before and after the implosions of the bubbles. The plummet of the real interest rate in Japan,

in Figure 8, from an average of 3% to almost 0% in the late 1980s coincided with the bubble implosion in 1989. In fact, the story of the Japan bubble sounds very similar to the subprime crisis of the US, "... during this period, Japanese banks recklessly financed commercial real estate and commercial land at unheard of prices." (Smick, 2008).

Explaining the two asset price bubble implosions in Hong Kong by negative interest rate makes more sense than relying on a contagious theory. Figure 9 shows the real interest rate in Hong Kong, and it vividly shows two negative interest rate sessions coinciding with the two meltdown period. There had been a long period of negative real interest rate in the 1990s, which fuelled the asset price escalation, until 1997, when the first bubble was burst. Then, following the interest rate cut of the US due to the currency board arrangement, another negative interest rate session is resulted in 2008, when the second bubble was imploded.

With the currency board arrangement and no restrictions on money flow, Hong Kong becomes a natural attraction for arbitrageurs because the interest rate in Hong Kong is always closely tracking with that in the US, but the inflation rates of the two economies can be very different, which may result in negative real interest rate in Hong Kong. When people expect higher inflation rates approaching Hong Kong assets, and lower interest rates as required in the US, money all over the world would flow into the asset markets in Hong Kong. When the expectation reverses, global funds leave the city rapidly. This force of globalization of funds further lead to a reduction of interest rate when it is already too low, and an increase of interest rate when it is too high. And indeed it is one of

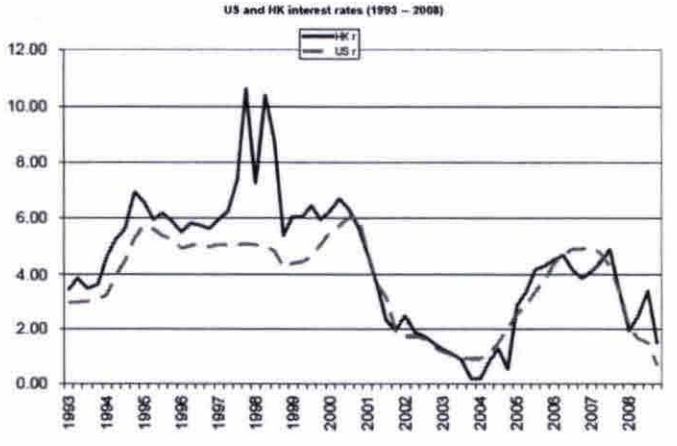


**Figure 7: The Inter-bank Overnight Interest Rate in Hong Kong (HK r) and the short-term interest rate (3-month Treasury bill yield) in the US (US r) from 1993 to 2008**

Remarks: HK interest rate from the inter-bank overnight interest rate in Hong Kong, retrieved at http://www.censtatd.gov.hk/hong_kong_statistics/statistics_by_subject/index.jsp?subjectID=11&charsetID=1&displayMode=T US interest rate from the 3-month Treasury Bill Yield in the U.S., retrieved at http://www.wrenresearch.com.au/downloads/files/mus3m.csv

Source: Hong Kong Monetary Authority, the U.S. Federal Reserve System

the reasons for a long period of very low long-term interest rate worldwide since the 1990s, which has soared the stock markets and real estate prices globally.

Figure 10 shows the real interest rate of the US (short-term interest rate) from 1991 to 2008, which shows a plummet in 2000 and then a substantially long period of negative interest rate in the period of 2003-2006, and then another plummet since 2008 onwards. There have been various reasons for the interest rate cut in these periods, such as the Y2K-bug in 2000, the dotcom bubble in 2004, etc. From Figure 7 above, you can find that, from 2000 to 2004, Alan Greenspan dropped the short-term rate from 6% to 1% to save the economy. It worked, but with the consequence of a subprime bubble. The latest negative interest rate hit the trough of -4% in Sep. 2008, when the financial tsunami hit.

However, using negative interest rate as a common symptom to asset price bubbles has at least two complications. First, the metric of inflation rate can be tricky, for example, in Europe and Hong Kong, inflation is a measure of all price level change including food and energy - Headline Inflation. But the Federal Reserve of the US prefers to consider the Core Inflation, which excludes price changes in food and energy. In the recent decade, however, the major contributors to global inflation were the upsurge in food and energy prices. The inclusion of them in the calculation of inflation would obtain a much higher rate of inflation (as shown above), i.e. much more negative real interest rate.

The second complication is the spread of interest rate, which the central bank can influence the short-term rate only, leaving the long-term rate to be determined by the markets. Figure 11 shows the US long-term real interest rate, which one cannot find the negative rate in the early 2000s, but just a negative rate session in 2008.


**Figure 8: The Real Interest Rate in Japan (1982 - 1996)**

Remarks: Interest rate from the basic loan rate in Japan at: http://www.stat-search.boj.or.jp/ssi/mtshtml/m_en.html
Inflation rate = consumer price index (composite) at DataStream.
Data after 1996 are excluded due to the volatile risk premium and expectation of income growth after the bubble burst.
Source: Statistical Survey Department, Statistics Bureau, Ministry of Internal Affairs and Communications, Japan

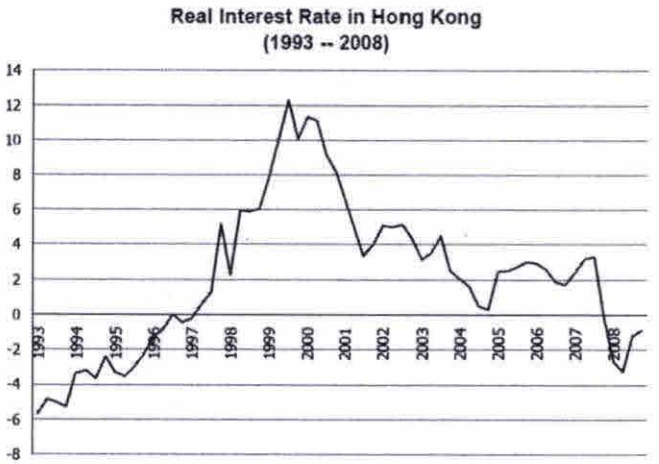


**Figure 9: The Real Interest Rate in Hong Kong (1993 – 2008)**

Remarks: Interest rate from 6-month inter-bank offered rate in Hong Kong retrieved at: http://www.censtatd.gov.hk/hong_kong_statistics/statistics_by_subject/index.jsp?subjectID=11&charsetID =1&displayMode=T
Source: Hong Kong Monetary Authority, Hong Kong

Figures 12, 13 and 14, plot the scatterplots of housing return versus real interest rate in Japan, Hong Kong and in the US, all show a negative relationship between housing return and real interest rate. It confirms our contention that real interest rate is a common indicator on the change of housing price (i.e. growth rate of housing price).

If real interest rate is a common symptom of asset price bubble, then why governments, bankers and institutional investors could not predict and prevent the bubbles? It shall be noted that the identification of the common symptom of asset price bubbles does not necessarily imply that they can be prevented in the future. However, people may further argue that, unlike an earthquake, an asset price bubble is human-made and shall be able to be released by human acts rather than letting it implode. Why governments and bankers could not do so?

Soft-landing or deflating-a-bubble is easier said than done, the difficulties can be imagined by an analogy of Robinson and Berridge's (2003) ***"Drug Addiction Model"*** A growth of the economy achieved by credit expansion works like drug addiction, as it provides a pleasant reinforcer of further growth and an unpleasant symptom of recession associated with withdrawal. Unfortunately, with repeated drug use results in addiction, and which would intensify the magnitude and the duration of the unpleasant symptom. In other words, with more successful preventions of recession by credit expansion, more substantial credit supply is necessary to keep the bubble booming, and the more torturous the results of a bubble implosion would be.

So having discovered that negative interest rates is a **common denominator** in three major asset bubbles which caused massive Real Estate Tsunamis and tectonic aftershocks which in some


**Figure 10: The Real Interest Rate in the US (1991 - 2008)**

Remarks: Interest Rate from US 3-Month Treasury bill Rate, retrieved at http://www.wrenresearch.com.au/downloads/files/mus3m.csv
Inflation Rate = Consumer Price Index for All Urban Consumers: All Items, retrieved at
http://www.forecasts.org/data/data/CPIAUCNS.htm
Source: the U.S. Federal Reserve System

cases lasted for over 14 years (Japan) and stubbornly high unemployment rates in the USA (2009-2010), The relevant question should be how can Asian economies erect economic breakwaters or bulwarks to stem the overflow or financial tidal waves caused by hot monies or the implosion of asset bubbles which can devastate real economies and destroy jobs leading to acute misery and economic hardships? To answer this question we now must look at the major and most influential country in Asia pacific with the highest rate of GDP growth (10.7%) in Q4 2009. A country that not only shrugged the Western Financial Crisis of 2009 but also provided a model for economic breakwater and is looked upon by the Western world as the potential engine of growth for the next decade as the Western economies rebuild their shattered banking infrastructure, redress saving imbalances and chronic unemployment coupled with fiscal deficits. This country is China known to the local citizens as **"Zhong Guo"**, the Middle Kingdom.China not only was the first nation to successfully emerge come out of the Western Financial Crisis relatively intact with excellent economic infrastructure but is amongst the first nation to begin to **normalise interest rates** to prevent the rising inflation rate which could give rise to asset bubbles and negative interest rates which we have earlier demonstrated and argued is the root cause for asset bubbles and eventual collapses. So to better build the linkages and erect the appropriate economic breakwaters, we must also understand the cultural, political and social strategies pre-crisis and post crisis and understand the "China Promethean Model" that can serve as a basis for other nations to build up their economic defences and provide shock absorbers for the next Economic aftershock or financial Tsunami.


**Figure 11: The Long-Term Real Interest Rate in the US (1991 - 2008)**

Remarks: Interest Rate from US 10-Year Treasury Bond Yield Rate, retrieved at http://www.wrenresearch.com.au/downloads/files/muslb.csv
Inflation Rate = Consumer Price Index for All Urban Consumers: All Items, retrieved at
http://www.forecasts.org/data/data/CPIAUCNS.htm
Source: the U.S. Federal Reserve System,

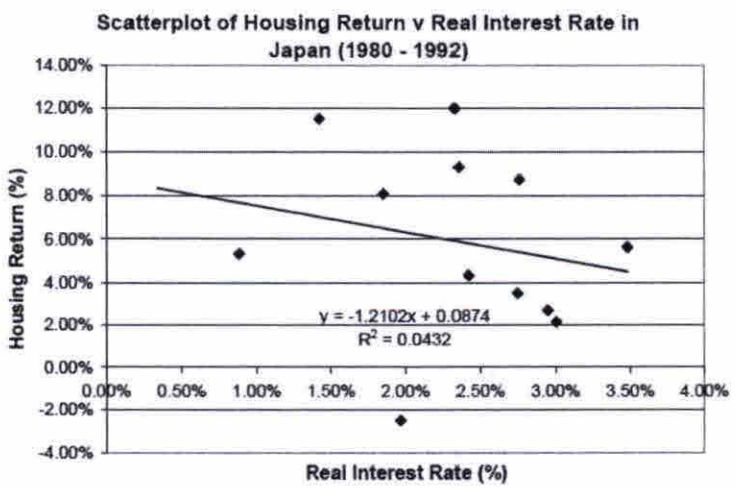


**Figure 12: Scatterplot of Annual Housing Return versus Real Interest Rate in Japan (1980 - 1992)**

Remarks: Annual Housing Return = dln (Annual Japan Land Price Index) * 100%]
Real Interest Rate = (Nominal Interest Rate – Inflation Rate) * 100%
Data after 1992 are excluded due to the volatile risk premium and expectation of income growth after the Bubble burst

## 5.0 The Western Financial Crisis highlights the reality of a New Asian World Order with the China Promethean Model

The Western Financial Crisis highlights the reality of a New Asian World Order with China in the Driver's Seat. Inexpensive Chinese goods have kept U.S. and European inflation down, despite the U.S. Federal Reserve's highly stimulative monetary policy under Alan Greenspan, which persisted well after the tech bubble bust in 2002, and despite the Bush administration's highly stimulative fiscal deficits. Because the Federal Reserve was only willing to counter goods inflation, not asset inflation, Western interest rates in turn were kept lower than they would otherwise have been. As the U.S. Department of Treasury sold bonds to finance the budget deficits, large purchases by Chinese, other Asian and Middle Eastern countries kept interest rates on those bonds from rising as much as they otherwise would have. Meanwhile, Japan's near-zero interest rates enabled hedge funds and others throughout the world to borrow yen at very low interest rates and invest in every kind of asset, including real estate, stock markets, and private equity, driving asset prices up throughout the world.

Whenever an economy is swamped by excess liquidity and goods inflation is capped, the prices of assets like real estate and stocks rise. Excess money has to go somewhere. When the amount of liquidity is exceptional, the rise of asset prices is similarly exceptional. In all the resulting asset bubbles, financial speculation accelerates. The recycling of China's huge foreign exchange reserves was far from the only source of the tsunami of liquidity, but it was one of the largest. Chinese leaders have angrily denied that Chinese funds and inexpensive exports played this role, but ultimately it is a simple fact. Conversely, Western politicians have been far too quick to blame Chinese currency policies when the actual problem stemmed from the U.S. bubble demand, combined with high Chinese savings rates, that were the inexorable consequences of a huge, young

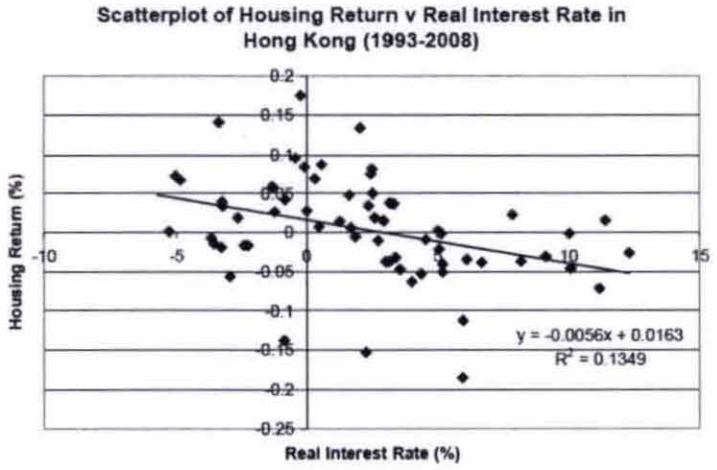


**Figure 13: Scatter plot of Quarterly Housing Return versus Real Interest Rate in Hong Kong (1993 - 2008)**

Remarks: Quarterly Housing Return = dln (Quarterly Housing Price Index) * 100%
Real Interest Rate = (Nominal Interest Rate – Inflation Rate) * 100%

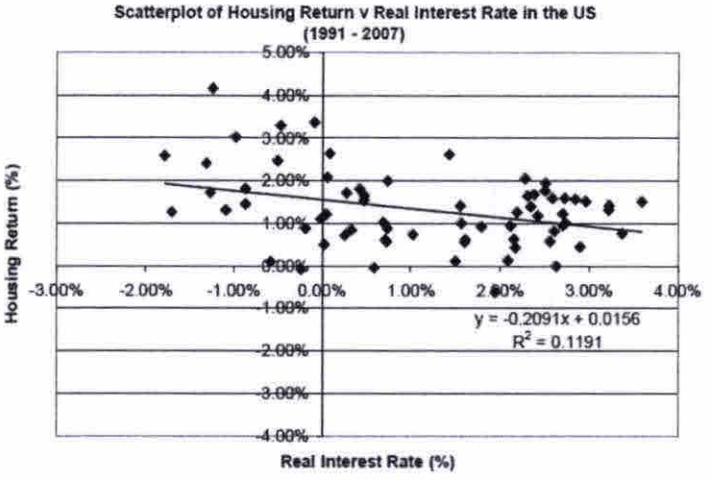


**Figure 14: Scatter plot of Housing Return versus Real Interest Rate in the US (1993 – 2007)**

Remarks: Quarterly Housing Return = din (Quarterly Housing Price Index) * 100%
Real Interest Rate = (Nominal Interest Rate – Inflation Rate) * 100%
Data of 2008 are excluded due to the volatile risk premium and expectation of income growth during the Bubble burst

Chinese population desperately needing to save to ensure that their children would receive good educations, and that they themselves would have adequate health care and retirement security given the country's lack of adequate medical insurance, social security, and pensions. The Chinese government was investing proportionately huge sums to address those inadequacies, but the shortfalls were too large to be offset in anything less than decades.

The flood of liquidity would have caused serious bubbles in any imaginable circumstances, but those bubbles as well as the consequences of their collapse were inflated by Western failures: poor bank supervision, congressional refusal to allow tightened regulation of government-backed mortgage institutions, corrupt credit rating procedures, and central bank insistence that it was right to bail out the markets when bubbles burst, but wrong to prick the bubbles when they inflate. Western mismanagement, therefore, ensured maximum damage from excess Asian liquidity.

The central phenomenon underlying the global financial crisis is a combination of financial globalization and national monetary policy. The surge of liquidity and the management problem it creates are global, but each country manages as if it were an island. Western politicians have sought to blame the Chinese currency regime for global imbalances position that is untenable on the evidence. Chinese politicians have consistently denied that China contributed to the crisis while distinguished Chinese scholars have even claimed that U.S. management of the dollar has been responsible not just for the current financial crisis but also for the earlier Mexican (1994), Russian (1998), and Asian (1997 – 1998) crises.

### 5.1 China's Pre-Crisis Economic Strategy

China's domestic situation and policy misjudgments have magnified the impact of the financial crisis on China itself. Prior to the crisis, China was experiencing a paradoxical combination of rapidly rising inflation (from near-zero to over eight percent in about two years) and spreading bankruptcies. That seemingly contradictory combination signalled a structural problem, namely a strategy for growth that had been fabulously successful but was becoming obsolescent. China's spectacular growth had two main drivers. Heavy industry and infrastructure was the first. Chinese development of modern highways, ports, and telecommunications provided the foundation for its rapid development. In every year of the reform era, China built more modern highways than India had built in the entire period since independence in 1947. In support of such efforts to build infrastructure and industry, China's petrochemical, steel, aluminium, and concrete industries, among others, compounded spectacularly. By 2007, China's capacity to make steel constituted 38 percent of world production, dwarfing each of its major competitors; Europe, Japan, and the United States.

When the centre of gravity of this development of infrastructure and heavy industry was, for instance, highway and rail lines connecting Beijing and Shanghai, the economic payoff was large and immediate. Later, when much of it focused on palatial, redundant shopping malls and luxury property developments, the payoff became negligible to negative. China was driving up the prices of raw materials throughout the world, degrading its own environment, and using vast amounts of capital in the pursuit of drastically diminishing returns. The second driver of rapid Chinese growth was the use of cheap labour to manufacture and export vast amounts of low-end products: socks, shoes, shirts, toys, basic consumer appliances, and much else. But Chinese wages had been rising very fast for a very long time, and a new labour rights law immensely increased the cost of labour, so this thrust of China's growth strategy was also meeting diminishing returns. Earlier, foreign investors looked primarily to China when investing in these industries, but as labour costs continued to skyrocket, they started deserting China in droves, favouring cheaper places like Vietnam.

### 5.2 China's Growth Strategy; Riding a Crouching Tiger

For China's success to continue, the next wave of rapid growth will need to focus on higher value added manufacturing, a shift toward the domestic market, a shift of the centre of gravity of growth from the coast to the interior, a vast expansion of the service sector, and the dynamism of small and medium enterprises which are predominantly private. The response of the current Chinese administration to this new strategic situation prior to the crisis has been far less decisive than the Deng Xiaoping and Jiang Zemin/Zhu Rongji administrations had been. President Hu Jintao and Prime Minister Wen Jiabao have strongly and successfully emphasized a shift toward development of the interior, but the other policy imperatives are addressed slowly at best. The reasons go to the heart of China's current political situation. Under Zhu's determined leadershipp, the structure of China's industry had been transformed at the price of a degree of social stress that is inadequately appreciated in the West. In the decade after 1994, state enterprise jobs declined by 44 million and manufacturing jobs by 25 million.

The new administration of Hu and Wen, which began in 2003, was a direct reaction to this situation. Both have stood for fairness and stability, rather than rapid commercialisation and social stress. They

represent the interests of the interior against the dynamic coast (Western impoverish provinces of Qinghai and Gansu versus the industrialised Eastern provinces of Guangdong and Zhejiang) and of the poor against the very rich. President Hu Jintao's stated goal, the **"Harmonious Society",** at the grandest level, represents a forward-looking replacement for the Leninist—Maoist political dynamic of class struggle and class dictatorship with a post-Marxist acknowledgement of the realities of an emergent middle class society, along with the possibility of Governance based on largely shared middle class interests as elaborated by Saich and Yusuf (2008). At the operational level, it repudiates the ruthless commercialisation, inequality, and social and environmental stress of the preceding decade.

In many ways, the history of China in the reform era was like a man being chased by a tiger. If you focus on the man, you are impressed by the extraordinary speed at which he runs. If you focus on the tiger, which was China's frightening problems of unemployment, urbanization, environmental deterioration, and many others then you are impressed that the man is barely able to avoid being eaten. (This has given rise to two separate literatures on China: "the rise of" and "the coming collapse of" genres.)

### 5.3 The Western Financial Crisis and China's Leap of Faith

The Harmonious Society required imperatives, namely two which stand out. China would have to abandon a wide swath of low-end manufacturing at the cost of many jobs, or at least millions of people changing jobs. The production of socks and towels has moved over the last half century from Mississippi/Alabama, USA to Osaka, Japan to Seoul/Taipei to Philippines/ Malaysia/Thailand to China and now on to Sri Lanka/South India and Vietnam. Nevertheless, China's manufacturing job losses have already been great and the imperative for further rapid change is a tough challenge for the promoters of the Harmonious Society.

The second aspect of the new path is the requirement to surrender political levers of control in return for potentially vast but uncertain gains. To put this in perspective, each major phase of Chinese development has involved such a trade off. Under Deng, Chinese leaders acquiesced in the dissolution of rural communes in favour of a return to family farming. With the communes, government and party leaders had direct control of the jobs and livelihoods of almost all the rural population. Likewise, when Zhu reformed urban industry, shedding all those state enterprise jobs and stepping back in many other ways from direct controls over urban livelihoods, the party enjoyed economic growth that transformed the lives of the overwhelming majority of Chinese people. As a result of Deng's and Zhu's successful policies, top Chinese leaders enjoyed public approval ratings their Western counterparts can only dream about.

Similarly, the next phase of rapid Chinese development will require the leadership to surrender substantial control over the flow of capital throughout the Chinese economy. Today, bank loans go mainly to large state enterprises. Listing on the Shanghai stock market is not based on objective economic performance criteria, as in Hong Kong and New York, but rather requires a license. Those licenses are granted mainly not exclusively but mainly to large state enterprises. Behind these controls lie both a genuine social purpose and a crucial political concern. China's leaders want to preserve and enhance the value of state enterprises as a way to fund the seemingly overwhelming financial costs of the medical insurance, social insurance, and pensions China so desperately needs.

They have to do this in less than a decade, before a graying society makes those costs insurmountable.

But to take the Chinese economy to the next level, they are going to have to risk: subjecting those firms to the full force of competitive markets; witnessing the potential decline of high stock market prices that make paying for a social safety net seem (barely) possible; and sacrificing much of the enormous political leverage that derives from ultimate control over the flow of capital. This phase is not as risky as the ones Deng and Zhu launched, but it is immeasurably greater than the risks The Obama administration is taking with health care reform. For the leaders of the Harmonious Society with their emphasis on order, stability, control, fairness, and harmony, this is a formidable challenge and requires a tremendous Leap of Faith.

### 5.4 Currency Appreciation and Mass Incidents

As a result, the new Hu/Wen team was slow to move toward a new growth path. But pressures mounted, and these leaders had good advisors fully aware of the emerging economic realities, so in mid-2000's they started to move fast. The currency was allowed to appreciate over 20 percent from $8.28 in June 2005 to $6.83 in August 2008. More importantly, when wages were already quickly rising because of a tight labour market, a new labour law took effect on January 1, 2008, drastically raising labour costs. The exact costs are controversial and difficult to calculate because one of the biggest impacts varied greatly among companies: a requirement for employers who laid off workers to pay out the workers depending on their tenure with the firm. For many foreign employers that raised their labour cost by 200—300 percent. A survey by the Hong Kong Federation of Industries (HKFI) published in October 2008 found that, of the 70,000 firms in China owned by their members, 20 percent were either out of business or being phased out. The owners primarily blamed the new labour law for this development, which preceded the full demand collapse caused by the global financial crisis. In the Global capital of toy manufacturing – Guangdong Province, 53 percent of all toy companies (by number, not dollar volume) had collapsed by October 2008, before the effects of the Western financial crisis had really hit the shores of Asia Pacific.

When the Western financial crisis hit, the pre-existing deleterious combination of rising currency, market-based wage rises, and the residual effects of the previous years' inflation was suddenly magnified by a global collapse of demand. Foreign companies fled China like rats leaving a sinking ship. Local companies closed. Managers who didn't have the funds for the required payouts to laidoff workers fled to Taiwan, South Korea and elsewhere. According to official calculations, about 20 million workers lost their jobs (in the business community and amongst many Western economists, the number was believed to be far higher). Coastal China was vulnerable and was hit hard. The loss of tens of millions of jobs supplemented another domestic trend, namely the rapid rise over the years in the number of "mass incidents," or popular demonstrations.

According to official statistics, these had risen from 8,700 in 1993 to about 40,000 in the year 2000, compounded by increasing size, violence, and effectiveness of the protests, with a further rise to 74,000 in 2004. Official statistics do not yet reveal the scale of the additional impact of the Western financial crisis, but there have been many widely publicized protests by workers losing their jobs.

This led some Western commentators to speculate that regime stability could be threatened, although that seems extremely

unlikely. Everything we know about the demonstrations is that they are directed at local businesses and local government and party officials. In almost all cases, they constitute an effort to attract the attention of the central government, which according to credible polls is generally regarded as doing a good job under difficult circumstances, whereas sub-provincial governments are generally regarded with something between disdain and angry contempt as noted by Tanner (2004).

Having said this, demonstrations were sufficiently numerous and vehement to raise strong central government concern about the risk of even wider unemployment and even deeper mass disaffection. In particular, the government became relatively cautious regarding issues that could exacerbate unrest preferring to emphasize political unrest in Tibet and Xinjiang Province instead. One must hasten to add that the spark that exploded in Urumchi, Xinjiang was over displaced Uyghur migrant workers protesting unjust racial prejudice over legal court cases involving sacked Uyghur's in Guangdong Province. The appreciation of the RMB currency ceased, since a rising RMB currency would make imports more uncompetitive and add to rising unemployment and factory closures in the Coastal Provinces. In some cases, the Beijing government called off important plans, such as the sale of the Linzhou Iron and Steel Co. in Henan observed by Shai (2009), when confronted by violent worker protests.

### 5.5 The China Promethean Model.

Given the regime's awareness that it derives its legitimacy from strong economic performance, Beijing responded decisively to the financial crisis. On November 9, 2008, it announced a fiscal stimulus of RMB 4 trillion ($586 billion). The exact incremental stimulative effect was difficult to pin down because some of the expenditures may have been previously budgeted and much of the burden of funding projects was directed to local provincial governments, whose obedience is imperfect. But there was no doubt about the massive scale of the stimulus and its effect on project spending throughout China. This model known as the **China Promethean Model** is not only massive hence the name "Promethean" but also extensive in its reach to uplift the economic standard of living for the poorer Western Regions.

Officials reported that, whereas the central government had previously acted to constrain local governments from implementing projects that seemed to be of dubious value, now the pressures flipped to very serious criticism of those same local governments for not implementing even more projects quickly enough. Compared to the United States, China had many more shovel-ready projects and its system presented fewer legal or regulatory obstacles to their rapid implementation. Moreover, the Chinese fiscal stimulus was far more focused on actual crisis stimulus than its U.S. counterpart, which was heavily a social improvement agenda that included health care, education, alternative energy, and the like (as contrasted for instance with revamping badly deteriorated physical infrastructure), and with spending spread out over a good many years. In China, monetary and fiscal stimuli overlapped and reinforced each other to a far greater extent because China's monetary stimulus, in a well-capitalized banking system, was channelled much more into actual projects. U.S. monetary policy had to focus on bailing out a collapsing financial system.

Having come off a restrictive anti-inflation policy, starting in September 2008 the People's Bank of China (China Central Bank) cut Chinese interest rates three times by 0.27 percent each time and then by 1.08 percent in November to a deposit

rate of 2.52 percent. More importantly, it cut the highly restrictive requirements for bank reserves and mandated such sharp increases in lending that many observers were alarmed as explained by Fang et al (2009).

### 5.6 China's GDP Growth Predominantly from Domestic Sources.

The China government's efforts to stimulate the economy via the **China Promethean Model** are unquestionably successful. Fixed asset investment in the first half of 2009 rose 33.5 percent over its 2008 counterpart, and according to official statistics, gross domestic product (GDP) growth in the first quarter of 2009 was 6.1 percent, followed by 7.9 percent in the second quarter. GDP growth in Chongqing, China's largest city and the centre of gravity of central government efforts to develop the relatively backward interior was running in excess of a 15 percent annual rate. Supported by central government subsidies for the purchase of consumer electronics and appliances, national retail spending in the first half of 2009 grew 15 percent. August 2009 real estate investment was up 14.7 percent over August 2008.

In early 2009, China surpassed the United States for the first time in total car sales and was expected by brokerage analysts to sustain that lead for the full year by selling 10—11 million cars. Enhanced as elsewhere by stimulus programs, Chinese car sales in June 2009 rose 48 percent over 2008 – General Motors' sales in China that month were up 38 percent. Asset prices also reflected recovery. By summer 2009, property prices in Shanghai and other major cities were back to their peak 2007 bubble levels. By mid-July 2009, the Shanghai stock market had gained 75 percent over its level at the beginning of the year.

By July 2009, the government was sufficiently confident about recovery, and sufficiently concerned about asset bubbles, that it started applying the monetary brakes as observed by Anderlini (2009). The volume of new lending by Chinese banks slowed by 77 percent in July 2009 compared with June 2008 as explained by Oliver (2009) and the pace of economic growth slowed slightly. China had stepped on the accelerator more decisively than the rest of the world and started applying the monetary brakes correspondingly earlier, thereby seeming to set a gold standard for crisis management.

### 5.7 The Future for China and Asia Pacific?

There remain two levels of questions about the future. The first concerns the hangovers from the stimulus, which will be ubiquitous. Top bankers acknowledge that there will be a hangover of bad loans in China as a result of the hasty approval of numerous projects that would never have passed reviews before the stimulus. We will not know the scale of the bad loans for at least a couple years, but the consensus is that they will not be crippling. The big banks, chastened by their difficulties of a decade ago, were more cautious than the statistics indicate. Increasingly capable credit departments were supplemented by gamesmanship in meeting Beijing's lending targets: just under one-third of their increased "lending" may have been a virtually risk-free exchange of notes among themselves.

The problems will fall primarily on smaller banks. The financial stimulus completely re-inflated the property market in major cities. The government not only bailed out the market but also all the major property developers. Market insiders say that bubble psychology has completely and dangerously revived. In this sector, the Chinese government has particularly set the global lead standard for creating moral hazard. There will eventually be a substantial price to pay. Likewise, the

spectacular rise in the Shanghai stock market may prove to be unsustainable. Given the decisiveness of the government's other moves, it could prove decisive here also, but the question remains until data answers it. Meanwhile, household savings were falling in the summer of 2009 (i.e. by RMB 19.2 billion in July) as families shifted out of savings into the stock market.

At the second and more strategic level, the crucial question for China's economic future is whether the government not only can push the economy onto a new growth path but move beyond obsolescent strategies based on overinvesting in heavy industry and relying for employment on extremely cheap labour. Small and medium industries, the service sector, and the private sector appear to have been severely damaged by the Western Financial Crisis. As elsewhere, the stimulus has flowed into older sectors the state enterprises that could create jobs quickly and were more likely to be able to pay back their loans. On this level, the need for new directions comes solidly up against the apparently strong inclination of the Hu/Wen administration to continue to rely heavily on state enterprises for political control.

As is often the case, Chinese leaders continue to push stimulus programs when the economy seems to them not to have fully revived. The result in China is inflation of property and stock markets while the prices of goods deflate due to overcapacity. The only solution is to let firms go bankrupt until overcapacity and obsolete capacity have evaporated, while creating new jobs to replace the lost ones. As everywhere else, the only kinds of firms in China that can create massive numbers of jobs quickly are small, medium, largely private sector enterprises in higher-value manufacturing and services. Whether China's current leadership can grasp this and make necessary decisions, notwithstanding the associated political grief, remains to be seen.

One positive glimmer is the long-delayed plan to open the Growth Enterprise Market (GEM) in Shenzhen during October 2009, which is designed to support small companies. Another glimmer is enthusiastic government support for private equity funds, which would channel capital toward more efficient uses than constrained banks and stock markets. But these are as yet small glimmers. Decisive moves toward a new path might have to await the arrival in 2013 of the next administration, key candidates for which are believed to be more market-oriented.

The global financial crisis did not change the shape of the Pacific or global politics. It accelerated changes that had been long under way and some will celebrate the new reality; many will recoil from it. But, the financial crisis highlighted the reality of a new order in Asia and to some extent in the World. Washington and Beijing could make big decisions and deploy vast resources in a focused way that Brussels (EU), New Delhi, and Tokyo could not. As Chinese demand gradually restored growth in Japan and other Asian countries, the new realities are far more quickly acknowledged in Asia than in Washington. To this end, we in Asia Pacific must begin to question if this new China Promethean model can be a bulwark of defence in times of Economic Tsunamis and consequently, be a topic for further research.

## 6.0 Conclusion: How to prevent the financial tsunamis from overwhelming our economies by building robust breakwaters

Reviewing the previous three asset price bubbles in Japan, in Hong Kong, and in the USA, we identified a common symptom of **negative real interest rates** in the three economies before any bubble implosions. The common symptom is in line with the theoretical model derived from the Yiu et

al (2009). Asset price is determined by the current income and the discount rate, which is determined by four components, viz. (1) nominal interest rate, (2) inflation rate, (3) risk premium and (4) expected income growth. Real interest rate is the difference between nominal interest rate and inflation rate. The empirical results show that real interest rate exerts a negative effect on the housing return. The bubbles were also found to be fuelled up by a period of negative interest rate, and then burst when the negative interest rate regime ended. Although a common symptom of asset price bubbles is found, it does not necessarily imply that bubble formation and implosion can be prevented in future. It is easier to avoid bubble formation than preventing a bubble implosion.

By studying China's employment of the Promethean economic model, we recognize that China has the huge financial reserves in order to undertake massive economic stimulus to mobilise local government spending to stimulate the regional economies. China invested heavily and wisely in heavy infrastructure spending which had the highest economic multiplier effect .China was the first nation to emerge from the Western Financial Crisis (Tsunami) relatively unscathed and has began to apply the monetary brakes and raise interest rates whilst restricting bank lending to equities and real estate which have smaller multipliers. This pre-emptive monetary action prevents an environment of negative interest rates which is a proven precursor to most excessive bubbles.

So the lesson we can apply to all emerging Asian nations is to apply massive quantitative easing at the start of any financial crisis and immediately undertake massive Keynesian expenditures and fiscal deficit financing. Upon successful jumpstarting of the local economies, to rapidly apply monetary tightening in tandem with rising inflation to prevent a negative interest rate environment which can cause explosive bubbles with even more devastating consequences when they burst and collapse. Consequently, Japan should learn from the China example and rapidly reflate her economy with massive fiscal expenditures instead of resorting to accommodative monetary policies of zero interest rates. A strong Japan with advanced technological capabilities coupled with the massive manufacturing capabilities of China makes for a dominant Asian economic trading bloc. Perhaps, the need to study an Asian Common currency will not be too remote. What is required is political will coupled with economic stability and stable partnerships of mutual benefit and assistance amongst Asian neighbours which will give rise to a "enrich thy neighbour policy" rather than "beggar thy neighbour".

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